Message Text

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ORIGIN ACDA-10

INFO OCT-01 AF-10 EUR-12 NEA-10 ISO-00 INRE-00 SSO-00
NSCE-00 USIE-00 ERDA-05 AID-05 CEA-01 CIAE-00
COME-00 DODE-00 EB-08 FEAE-00 FPC-01 H-01 INR-07
INT-05 L-03 NSAE-00 NSC-05 OMB-01 PM-04 OES-06
SP-02 SS-15 STR-04 TRSE-00 /116 R

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FM SECSTATE WASHDC
TO AMEMBASSY YAOUNDE IMMEDIATE
INFO AMEMBASSY BUDAPEST IMMEDIATE
AMEMBASSY TRIPOLI PRIORITY
AMEMBASSY VIENNA PRIORITY

C O N F I D E N T I A L STATE 087484

E.O. 11652: GDS

TAGS: PARM, TECH, MNUC, CM, LY

SUBJECT: LIBYAN INTEREST IN POSSIBLE THORIUM DEPOSITS

REF: (A) 75 YAOUNDE 4130; (B) YAOUNDE 00915;
(C) IAEA V 01754; (D) MOSCOW 03491

1. DEPARTMENT READ WITH INTEREST INFORMATION PROVIDED IN REFTEL (B) AND APPRECIATES TIMELINESS WITH WHICH EMBASSY REPORTED ITS CONCERN. EMBASSY SHOULD CONTINUE TO MONITOR SITUATION IN LOW-KEY MANNER AND PROMPTLY REPORT ANY FURTHER
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DEVELOPMENTS REGARDING THIS SUBJECT.

2. THE FOLLOWING INFORMATION IS PROVIDED AS BACKGROUND GUIDANCE FOR EMBASSY TO ASSIST IN REPORTING OF ANY SUBSEQUENT DEVELOPMENTS:

A. AS NOTED IN REFTEL (C), CAMEROON IS A PARTY TO THE

NON-PROLIFERATION TREATY BUT HAS NOT YET NEGOTIATED A SAFE-
GUARDS AGREEMENT WITH THE IAEA AS REQUIRED BY THE TREATY.

B. ACCORDING TO CURRENT INFORMATION, LIBYA IS NOT YET
OPERATING ANY TYPE OF NUCLEAR FACILITY, INCLUDING RESEARCH
REACTORS. THERE IS SOME EVIDENCE TO SUGGEST THAT THE
SOVIET UNION MAY SELL A SOVIET NUCLEAR POWER REACTOR, WITH

ASSOCIATED WATER DESALINIZATION PLANT, TO LIBYA: THE
DETAILS SURROUNDING THIS TRANSACTION ARE AS YET UNCLEAR
BUT MAY INVOLVE A STANDARD SOVIET 440 MW(E) PWR (SEE
REFTEL (D)). THERE IS NO INDICATION THAT THE LIBYANS ARE
ENGAGED IN ANY TYPE OF ADVANCED NUCLEAR RESEARCH, SUCH AS
THAT PERTAINING TO THE DEVELOPMENT OF A HIGH TEMPERATURE
GAS COOLED REACTOR (HTGR). LIBYA IS A PARTY TO THE NPT,
AND THEREFORE OBLIGATED TO ACCEPT IAEA SAFEGUARDS ON ALL
PEACEFUL NUCLEAR ACTIVITIES, AND IS CURRENTLY NEGOTIATING
A SG AGREEMENT WITH IAEA WHICH SHOULD HAVE GONE INTO EFFECT
IN NOVEMBER, 1976. ALTHOUGH LIBYA'S MORAL COMMITMENT TO
NON-PROLIFERATION IS DOUBTFUL, ATTEMPTS TO ACQUIRE UNSAFE-
GUARDED MATERIALS IN VIOLATION OF ITS NPT OBLIGATION WOULD
BE A HIGHLY RISKY PROPOSITION, GIVEN THE LIKELIHOOD OF
DETECTION AND THE FACT THAT LIBYA DOES NOT NOW HAVE A
REACTOR WHICH COULD BE UTILIZED FOR SUCH PURPOSES.

C. AT THE PRESENT TIME, HUNGARY HAS IN OPERATION TWO
SMALL RESEARCH REACTORS, A 2 MW(T) TANK RESEARCH REACTOR
WHICH BEGAN OPERATION IN MARCH 1959, AND A 10KW(T)
TRAINING REACTOR OPERATIVE SINCE JUNE 1971. THE FIRST
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HUNGARIAN POWER REACTOR IS NOT SCHEDULED TO BEGIN OPERATION
UNTIL 1980. MOREOVER, HUNGARY IS A PARTY TO THE NPT AND
HAS IN FORCE A SAFEGUARDS AGREEMENT WITH IAEA. GIVEN THE
LIMITED STATE OF HUNGARIAN NUCLEAR DEVELOPMENT, IT SEEMS
HIGHLY UNLIKELY THAT THE HUNGARIANS ARE ACTIVELY INVOLVED
IN THE TYPE OF ADVANCED TECHNOLOGY RESEARCH THAT COULD
LEAD TO THEIR DEVELOPMENT OF AN HTGR. WE HAVE NO EVIDENCE
TO SUGGEST THAT HUNGARY IS ENGAGED IN SUCH RESEARCH,
EITHER INDIGENOUSLY OR IN CONJUNCTION WITH ANOTHER COUNTRY,
INCLUDING LIBYA.

D. WHILE SEVERAL NATIONS ARE ENGAGED IN EXPERIMENTAL WORK
REGARDING HTGRS (INCLUDING JAPAN, THE UK, US, FRANCE,
SWITZERLAND, AND FRG) ONLY TWO, THE US AND FRG ARE
OPERATING FACILITIES OF ANY SIGNIFICANCE. (FYI: FRANCE
AND SWITZERLAND ARE PLANNING TO OPERATE SUCH FACILITIES
IN THE NEAR FUTURE. END FYI.)

E. CURRENTLY, HIGHLY ENRICHED URANIUM (HEU), URANIUM

ENRICHED TO APPROXIMATELY 93 PERCENT U-235, IS USED TO FUEL HTGRS. HEU -- WHICH CAN BE USED DIRECTLY IN NUCLEAR WEAPONS -- CAN BE OBTAINED ONLY AS A RESULT OF ENRICHMENT, A HIGHLY DEVELOPED AND EXPENSIVE TECHNOLOGY CURRENTLY UNDERTAKEN ON A COMMERCIAL SCALE ONLY BY NUCLEAR-WEAPONS STATES. TO DATE THE US HAS BEEN THE PRINCIPAL SOURCE OF HEU. THE FRENCH HAVE ALSO SUPPLIED SOME SMALL QUANTITIES ABROAD FOR RESEARCH REACTORS. (FYI: WHILE HEU IS USED TO FUEL HTGRS, RESEARCH IS ON-GOING IN

THE US AND FRG REGARDING POSSIBLE USE OF LOWER ENRICHMENTS WHICH WOULD NOT BE AMENABLE TO READY MISUSE FOR NON-PEACEFUL PURPOSES. END FYI) IN ORDER TO OBTAIN HEU TO FUEL AN HTGR INDIGENOUSLY, THE LIBYANS WOULD HAVE TO SECURE ADEQUATE SUPPLIES OF NATURAL URANIUM AND DEVELOP THEIR OWN ENRICHMENT FACILITY -- AN IMPOSSIBLE STEP IN THE NEAR TERM GIVEN THEIR CURRENT STATE OF NUCLEAR DEVELOPMENT.
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FURTHERMORE, AT PRESENT THERE APPEARS NO LIKELIHOOD THAT THE US WOULD SUPPLY LIBYA WITH HEU AND ALL OTHER COUNTRIES WITH ENRICHMENT CAPABILITY ARE COMMITTED,AS IS THE US, TO REQUIRING IAEA SAFEGUARDS ON ENRICHED URANIUM EXPORTS.

F. THORIUM-232 IS A NATURALLY RADIOACTIVE ELEMENT FOUND IN NATURE, AND HAS BEEN SUGGESTED FOR USE IN HTGRS. THE FERTILE THORIUM-232 ISOTOPE IS ABUNDANT AND CAN BE TRANS-MUTED INTO FISSIONABLE URANIUM-233 BY NEUTRON IRRADIATION. TO PRODUCE U-233, THORIUM-232 WOULD HAVE TO BE MIXED WITH EITHER PLUTONIUM OR U-235 IN A REACTOR. NEITHER OF THESE MATERIALS IS READILY AVAILABLE TO LIBYA. WHILE WEAPONS-USABLE MATERIALS SUCH AS U-233 ARE CONTAINED IN THE SPENT FUEL, REPROCESSING IS REQUIRED TO SEPARATE THESE MATERIALS. THIS DIFFICULT TECHNOLOGY IS NOT AVAILABLE TO LIBYA AT THIS TIME. INDEED, COMMERCIAL-SCALE REPROCESSING OF THORIUM-CONTAINING HTGR FUELS HAS YET TO BE DEMONSTRATED.
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Message Attributes

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Control Number: n/a
Copy: SINGLE
Sent Date: 19-Apr-1977 12:00:00 am
Decaption Date: 01-Jan-1960 12:00:00 am
Decaption Note:
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Disposition Approved on Date:
Disposition Case Number: n/a
Disposition Comment: 25 YEAR REVIEW
Disposition Date: 22 May 2009
Disposition Event:
Disposition History: n/a
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